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REMARKS

The present invention relates to an improved chemical-mechanical polishing (CMP) slurry composition. Claims 1-16 are pending. Claims 1-16 currently stand rejected. An advisory action was mailed on December 27, 2007, which stated that the previously filed claim amendments from December 12, 2007 were not entered. In the previously amended claims, claims 1 and 10 were amended with the limitations of original claims 6 and 13. As a result claims 6 and 13 were canceled and claims 7 and 14 were amended to reflect the change in dependency. No new matter entered as a result of this amendment. The amended claims more particularly point out that the abrasive is part of the composition in a defined amount.

Discussion of Advisory Action

The Advisory Action argues that applicants have failed to provide any evidence which teaches the metal coating from the abrasive taught by the Small reference would not become liberated and dissolve into the polishing solution and thus read on the claimed invention. Additionally, the Advisory Action argues that the Brigham reference is provided to teach that the quantity of metal ions claimed by applicants is known to be useful in compositions polishing metals. Finally, the Advisory Action argues that Sethuraman teaches alpha alumina particles in CMP solutions. The Advisory Action acknowledges the applicants argument that the alpha alumina of Sethuraman is part of a fixed abrasive and not in solution. The Advisory Action rebuts this argument by citing a patent to Geyer and arguing that it is inevitable that a number of abrasive grains will be liberated into the polishing composition.

The applicants respectfully disagree. As has been acknowledged by the Supreme Court, “[r]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385, 1396 (2007), quoting *In re Kahn*, 441 F.3d 977, 988, 78 U.S.P.Q.2d 1329, 1336 (Fed. Cir. 2006). In the present case, the asserted combinations under §103 appear to be inconsistent with the KSR guidelines, and reconsideration is requested. For example, the teachings of the Small reference are to a catalyst-coated abrasive. The Examiner appears to be concluding that the coating would

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necessarily become detached and dissolve in the polishing composition in the concentration claimed by the applicants. The Examiner provides no citation to the teaching or suggestion of this conclusion, but instead challenges the applicants to provide evidence that it would not happen. Applicants assert that it would not have been obvious to a person of skill in the art to formulate a composition having about 0.05 to about 50 mmol/kg of ions of at least one metal selected from the group consisting of calcium, strontium, barium, and mixtures thereof, after consideration of all the facts.

Additionally, the Brigham reference teaches a polishing slurry comprising the combination of the anions chloride and sulfate. The Brigham reference teaches that the counterion of these anions may be an alkaline earth metal such as calcium. Contrary to the assertion in the Advisory Action, the Brigham reference does not teach that the metal ions of the present invention are useful in compositions for polishing metals. They teach that the combination of chloride and sulfate are effective in polishing metals. They simply state that calcium may be one way to supply the chloride or sulfate anions. A person of skill in the art would not have found it obvious to combine Brigham with the teachings of Small because each element of the prior art would not have merely performed the same function as they did separately, and the result of the combination would not have been predictable.

Finally, the Sethuraman reference teaches a pad having alpha alumina particles fixed in the pad. The Geyer reference supplied by the Advisory Action speaks in very general terms in the Background section of their specification. The Geyer reference never mentions the type of abrasive or the composition of the pad that they use to assert that this detachment is well known. They simply mention that it depends on the type of wafer and/or the polishing means. Nevertheless, this is contrary to the teachings of the Sethuraman reference, which teaches that a problem with the fixed abrasive pads, as opposed to abrasives suspended in the slurry, is that the particles from the fixed abrasive pad are liberated from the pad and embed into the substrate. The Geyer reference teaches that the fixed pad abrasives act like a "true" polishing composition once the abrasive is liberated from the pad, as opposed to a "grinding process" (column 3, lines 6-11). If this was the case, the problem taught by the Sethuraman reference, the embedding of abrasive particles into the substrate, which is the problem they address with their invention, would not happen. The combination of these references is

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improper because the Geyer reference teaches away from the combination. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)

The prior art gives no teaching or suggestion to the specific components, or of the claimed concentrations of the components, in the applicants composition. The rejections seem to be base on mere assumptions of coatings eroding from the catalyst-coated particles and particles eroding from the fixed abrasive pads of the prior art references. This would appear to be contrary to an "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

Conclusion

For at least these reasons, applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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